DOCUMENT RESUME

ED 178 880 CS 005 116

AUTHOR Manzo, Anthony
TITLE Toward Defining and Assessing Reading Maturity.
PUB DATE Nov 79
NOTE 31p.; Study prepared at the University of Missouri, Kansas City

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Concept Formation; *Content Reading; Definitions; Factor Analysis; *Individual Development; Junior High Schools; Motivation; *Reading Ability; *Reading Habits; *Reading Interests; Reading Research
IDENTIFIERS *Reading Maturity

ABSTRACT

The Assessment of Language and Reading Maturity (ALARM), a series of 15 subtests that measured reading skills and factors contributing to reading, was administered to 199 urban and 380 suburban junior high school students to assess the concept "progress toward reading maturity." Reading maturity was defined as evidence of solid reading competency, an adequate fund of general information, overall language proficiency, logical thinking, sound critical judgment, and an ever growing state of social-emotional stability. Data from the ALARM subtests were grouped into five categories, including general reading/language proficiency, general knowledge, thinking, social-emotional maturity, and critical judgments. Correlational analysis of the subtests revealed that all the subtests were significantly related to each other at relatively low levels, suggesting both some shared variance and considerable independence among the factors. Overall ALARM scores were very highly related to the factors social-emotional maturity, general reading/language, and critical judgments, and less highly related to general knowledge and thinking. General reading/language was significantly related to all the other factors. (RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Anthony Manzo
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

(Preliminary Paper for Review)

Secondary Reading Research Symposium
San Antonio, Texas (November, 1979)

ED178880

Toward Defining and Assessing Reading Maturity

Anthony Manzo
University of Missouri - Kansas City

The need to evolve a commonly held definition of reading maturity arises from the simple belief that teaching tends to be directed toward what can be measured adequately, with definitions, or conceptual objectives, left to find compatibility within those measures or to stand aside unattended. So it is that instructional efforts, which should be governed by our best thoughts and values, have tended to become reduced to the lower denominator of existing measures, and/or overly conventionalized values, such as the religiosity which has been woven into education. Together these have become the de facto definitions, objectives, and practices of American education. This is nowhere more apparent than in reading education where narrow measures have constricted the curriculum and vieled several misconceptions and paradoxes.

Concrete examples follow of the extent to which reading technology has become arrested either by narrow measurement concepts and/or failure to update our "values" base. One widely held practice in reading education is the use of "informal reading inventories", and their like, "miscue analyses". These are employed to discover patterns of errors students might be making while reading orally. From careful note of these, presumably an instructor is able to determine which word part elements a student needs to be taught. This is a weak concept. It is tenuous as to whether silent reading can be inferred from oral reading where children have gone beyond the third grade. The concept appears most warranted where students are learning for the first time; the oral reading test seems to tell well who has not yet learned the five sounds of A. Where failure to learn to read is approaching a chronic state, as it does beyond the third grade, the information provided by these inventories tends to be weak and uni-dimensional. The weakness is evidenced in the inconsistencies in the pattern of errors noted on phonic elements from one test situation to another. There is little test-retest reliability even on identical words.

CS005116

The inventories, and their like, tend to measure only a global deficiency, even though this is noted in the form of specific elements. Furthermore, there are at least three other possible domains in which causation might be located. Weiner and Cromer (1967) have coded these nicely as defect (constitutional weakness--vision, intellectual capacity, chemistry, etc.), disruption (primarily interloping emotionality), and difference (styles of learning or thinking which are incompatible with the teaching methods employed).

Nearly every reading diagnostician recognizes these facts, and many even attempt assessment of several of these factors. Reading therapy, however, tends to be oriented almost entirely toward "correcting" the reading deficiency with the implicit expectation that this will improve performance on the next informal reading inventory, and, have impact upon the causative factors. This one-remedy approach persists despite years of evidence that patterns of reading have been altered just as significantly by counseling ( ), by mind expanding activities (Haggard, 1977), and via other such (seemingly) peripheral factors. Thus, reading behavior essentially is a manifestation, or projection, of the complex factors composing the student.

An additional point regarding overly narrowed measurement and paradox in reading education must be noted to establish the footing for explanation of the current line of research and evelopment. It is a point related to how reading comprehension is measured and what beliefs and practices have tended to issue from this.

We measure comprehension essentially through variations on recall, which in itself does not seem such a bad idea; it is convenient, and it has tended to correlate highly with most all other methods attempted as measurements of comprehension. The fallacy lies in the tendency to employ this method almost exclusively, and to conclude, therefrom, that excellence in reading is on a continuum from very low recall to total recall. Excellence in reading, surely involves high level comprehension of a recall nature, but, too, it involves high level responding -- i.e., thinking. Thinking is personal and multifaceted, therefore it, necessarily, requires some excursion away from the author's line of exposition and consequently, some "loss" of recall; which might have bearing on

comprehension of the author's message, but not in the way expected. Recall of details seems to be relevant to a limited degree in estimation of the extent to which details were processed.

In any case, it is a trade-off. A compromise of total accuracy and recall to the privilege to think and react. This thought, suggests several others which are central to this paper: first, reading is a dynamic, fluid process; second, excellence in reading is something better understood as a compound, or index, of several factors into an optimal (as opposed to maximal) state with several possible balances of characteristics, each with its own integrity; and fourth, it is our values which will tend to determine which of the balances shall be considered to be excellent, which merely allowable, and which intolerable.

These, and related concerns, provide the impetus for the current effort to set-out a basis by which to conceptualize and assess progress toward these optimal states, here generically referred to as 'Reading Maturity', a code phrase for the more comprehensive concerns implicit in the unabridged term, Reading-Language-Thinking-Social/Emotional Maturity.

It is the conceptualization and assessment of this latter integrative function - or collection of skills, abilities, attitudes, life experiences, preferences and proclivities - which distinguishes this work from the more conventional study of basic skills in reading.

There are several pragmatic implications in this distinction, one is offered as example: If a college were to select two recipients for a scholarship, one based upon traditional indices of achievement, and another selected from the admixture here called 'Reading Maturity', the predication is that both would be successful in academics in college, but that the latter would embody more probably the versatility and attributes of a well-rounded, balanced, and high achieving individual in several facets of life both in college and thereafter.

Progress Convulsive

Progress toward a definition and unifying theory of reading maturity has been slow in evolving, fitful, and even now is quite tenuous.

Historically, most all instructional policies and practices in reading were intended to promote literacy and a common frame of reference in the form of the perceptions and values of the core, or anglo-American, culture.

These worthy, though limited objectives, as noted above, are in need of expanse. Interest in 'reading maturity', essentially a humanistic thrust, expressed itself first in the twenties and thirties following a long, slow evolution. It seemed to peak in the landmark study of Gray and Rogers in 1956, however, it already was in a state of decline. A new and stronger "behavioral engineering" thrust, made the pursuit of a complex and amorphous goal such as 'reading maturity' appear naive when set against the connotative rigor of such behavioral terms as: "stimulus-response", specific behavioral "objective", and"contingency reinforcement".

There were, and are, other factors slowing progress toward definition and understanding of reading maturity. Five of these are outlined briefly because they need to be understood better and remedied wherever analogous conditions are found to be operating to inhibit needed research and development.

Inhibitions to Progress

There has been an over concentration of study on the nature and characteristics of "remedial readers" as if this were the only problem related to reading. In contrast to this position, it is instructive to note, that we do not, as hinted above, seem to have the means and methods for dealing with the vagaries of those who read too much; a problem well-articulated by the psychologist, E.B. Heuy as early as 1908, but not heralded since. Within this generic class there are such problems as those who read primarily for escape, there are those who seem to comprehend, though....their minds remain unaltered, if not unalterable; and there are those whose view of reality is such that they read, in the words of William Penn, to the "oppression of the mind...(and) which is reason for so many useless scholars in the world".

A second inhibition stems from a loss of the psychological heritage. Early reading specialists, typically, were psychologists turned educators. They, in turn, trained

persons in educational-psychology. Those persons now reside almost exclusively in Schools of Education, and operate in a college atmosphere which has tended to over-departmentalize all learnings, causing a sharp narrowing of the field. Reading, while spoken of in expansive terms, has tended to become restricted to teaching about a collection of skills to be diagnosed and treated separately from other human dimensions and functions (Manzo, 1977).

Thirdly, the combination of just the above has reduced sharply the number of articles in journals of reading dealing with psychoeducational concerns; authors seem to have grown discouraged at trying to publish in what has become an alien, though in truth, not yet a hostile, environment.

Fourth, to study and to write on reading maturity seems to require more knowledge of more things than anyone can hope to achieve. This is a particularly powerful inhibition to the delicate ego of the scholar since the jury of consulting editors on most quality journals, and then, too, their readership still has representation from most all sub-specializations. Thus, while collectively we know a great deal, there is the irony that no one dares to attempt syntheses and integrative research of the type expected from such a collection of scholars.

Fifth, research of this type relies heavily upon expression of the values, attitudes, and judgments of the researcher, this, too, has tended to generate a great deal of shyness and discomfort, to the point of avoidance.

Finally, renewed interest in the teaching of the "basics" appears to be inciting a new waive of narrowed definitions in educational research and thought.

The thoughts which follow were conceived in the context of the above stated realizations, though, too, with a sense of the need to "push-on" nonetheless. This paper is meant, then, to <u>re-ignite</u> interest and activity in better understanding and defining reading maturity. To that end a brief critique follows, of the landmark study of Gray and Rogers (1956), after which there is a representative account of the current effort to provide the beginnings of a reasoned, data based, view of reading maturity, which for pragmatic reasons, became concentrated, in this case, to the junior high school level.

Much of the current effort is distilled from recent work reported in tandem dissertation studies by David Robinson (1977) and Deanna Martin (1978), and five years of previous studies, papers and articles, many cooperatively understaken with other doctoral students, most noteably Ula Casale, co-author of the measures employed and invaluable research associate in this and related works.

Gray and Rogers on Reading Maturity

The Gray and Rogers (1956) study emenated from a charge by the National Council of Teachers of English to provide high school and college teachers information on the characteristics of competent readers and ways of promoting their development. The Gray and Rogers study focused on the characteristics of mature readers and the development of an instrument for appraising reading behavior.

The basic questions studied were interpreted as follows: "Who needs what material of what level of maturity? How mature are the motive which lead to that reading? And, finally, are the effects of the reading - the reading outcomes - characteristic of a mature person?" (p. 16)

Gray and Rogers were able to draw from a considerable amount of earlier research, though most of those studies were addressed to the areas of "who" and "what" was read than "why" and "how". They concluded that the range of studies done and the varied context in which these were conceived and conducted made theoretical integration in any full sense impossible; as would be such a task today.

They sought a theoretical position by culling the literature for thoughts on the characteristics of the mature reader, adding their own prior and newly ignited thoughts, and, then, to see if they could find living representations of mature readers through case studies. In all, three iterative studies were conducted.

The first, a pilot-type study, led to an exacting list of postulated characteristics of the mature reader. The list was intended to represent these categories of concern: 1) interest in reading; 2) purpose for reading; 3) nature of the material read; 4) comprehension of what was read; 5) thoughtful reaction to and use of the ideas

apprehended; and 6) personal adjustment to reading. The data secured from the first "interviews" proved to be inadequate to apprasie factor 6, "personal adjustment to reading". The researchers reluctantly dropped this item from their analysis of mature reading, noting this to be a serious omission needing to be corrected in subsequent studies. Their revised categories and criteria are listed in Table I.

TABLE I
Five Basic Aspects of Efficient Reading and Related Criteria of Maturity

Basic Aspects of Reading	Criteria of Maturity
1. Interest in reading	1. Enthusiasm for reading
	2. Amount of time spent
	3. Breadth of interest
	4. Depth of interest
2. Purposes for reading	5. Variety of purposes that led to reading
	6. Value of purposes used
	7. Awareness of purposes
3. The recognition and construction of meaning	8. Grasp of literal or sense meaning
	9. Ability to see implied meanings
	10. Ability to use related meanings
	11. Ability to reach conclusions and make generalizations
4. Reaction to and use of ideas apprehended	12. Attitude of inquiry
	13. Tendency to suspend judgment
	14. Recognition of personal or social application of ideas
	15. Insightfulness of comments concerning application
5. Kinds of material read	16. Intellectual challenge of material read
	17. Richness of ideas in materials read
	18. Reading ease of materials read

The subjects of, and the setting for the second phase of study were selected to be representative of the total adult population and of American life. A Midwestern urban town, which they called "Trader City", was selected. Their conversations with subjects, which included discussion of two short pieces were recorded as judgments on a point scale of Reading Maturity by three judges. Table 2 offers a one paragraph representation of a typical case report.

TABLE 2

Analysis and Appraisal of Levels of Reading Maturity

> Miss Master's reading behavior revealed marked immaturity in practically all aspects of reading measured by the various reading maturity scales. She did not like to read, did not read except for perhaps an hour or so once a month, had no interests that led to reading, and saw no reasons for reading, beyond the practical demands of daily living. The maturity scores shown on the profile for materials read are based on her statement that she occasionally looked at the Reader's Digest. However, her responses to the reading she did during the interview indicated a level of comprehension insufficient even for a grasp of the literal meaning of that material. In fact, her competence, as determined by the judges, varied from Level 1 to Level 2, being most frequently at Level 1. (p.150)

This case, and many others like it, frustrated Gray and Rogers. They could not find a single exemplary case of a mature reader. This led to the decision to do a third study.

In study three, twenty-one reputedly mature readers were interviewed. It was hoped that such cases would force an expansion of the Reading Maturity Scale to accomodate an essentially vital and stimulating group of readers.

The reading behavior of all 21 cases were analyzed first in harmony with the procedures used with the Trader City population. further analyses hardly seemed warranted. No case was deemed to have approached full maturity in terms of definitions and criteria the researchers has postulated. Some showed "remarkable maturity" in two or three areas, but considerably less in other areas. Still others proved to be much less mature in reading than had been anticipated.

The Current Method for Defining Reading Maturity

The method, or process, by which this writer has attempted to define reading maturity is quasi-experimental. It is best understood as a research and development effort. The essence of the process was to review and compare the thoughts and deliberations of others with my own, to analyze and to attempt to project these as features or attributes (ideally, with levels of competency for each), which might qualify as elements comprising "Reading Maturity". These judgments, then, were formed, as near as was possible, into such means and methods of assessment as would permit us (Casale and myself) to ascertain whether these factors were operating within readers, to what extent, and in what combinations of ways. The belief was that further understanding of the many possible dimensions of reading maturity would be gained from logical analyses of subtest scores. Emerging patterns of scores were to be compared to the preconceived notions, or crudely, the hypotheses of the study.

This subjective-objective approach is akin to the "evidentiary" process ( ) of the court room -- where facts, intuition and logic are all combined, with no expectation that more than a reasonably probable conclusion can be drawn. In that respect, it differs from the approach of the hard sciences with emphasis on highly controlled experimental research...which in truth, rarely yields results any more conclusive than does the former process.

The method of research, in any case, was chosen, not for its purity, nor to suit the researchers' taste, but because the state of our knowledge seemed to warrant it.

Initial Thoughts, or Hypotheses

1. Reading maturity must and can be defined and measured in terms of social-emotional growth, and such abilities as the ability to think "evaluatively".

2. The measures developed necessarily would share considerable variance with conventional reading measures but too, would be sufficiently independent, or discrete, as to warrant separate consideration as educationally significant variables. That is, measures of emotional maturity and evaluative thinking ('critical judgments') would not

correlate very highly with reading achievement -- although there would be reasonably strong positive relationships (.40 - .60); thus, a high reading score would not necessarily be one with a high reading maturity score.

3. The "new" measures would differentiate groups in many of the same ways, but, too, in some different ways than conventional measures. Specifically, the measures would be the SAME as conventional measures in terms of differences typically found between a) sexes (girls scoring slightly, though non-significantly higher); b) races and social class setting (suburban whites showing clear superiority); c) age and grade (significant differences among age and grade levels).

4. The interrelationships of subtest scores with one another would conform to conventional findings, whereas the relationship of these scores to the total score, or reading maturity index, would show a different pattern, one more consistent with the values, and weightings ehich entered into the current definition (and, to an extent, theory) of reading maturity articulated in this study.

5. Diagnosis and remediation would be made easier, and directions and "people-concerns" in education would be made more clear as a result of the perceptions suggested by the refined understanding of reading maturity as a legitimate educational objective.

Assessment Procedures

A battery of fifteen subtests was constructed to assess "progress toward reading maturity". The decision was made to concentrate on grades 6-10. This is the period, Piaget (19) has suggested, where youngsters develop from concrete to formal operational thought, and therefore, would be the most measurable and discriminateable, periods of growth.

Actual data collection became narrowed by expediencies primarily to students in grades 7-9.

Students were selected to represent major racial groups, as well as urban, and sub-urban and ex-urban settings.

Approximately half of the tests employed measured reading skills, per se, while the others tended to measure bracing and complementary factors.

Students were informed that they were to take a new type of test for the Assessment of Language and Reading Maturity. The acronym ALARM was used to provide an easy label and sense of familiarity. Included in the sample were 199 urban students drawn randomly from one junior high, and 380 suburban (and ex-urban) students representing a chance cross-section of classes of voluntarily cooperating teachers.

No student was obliged to answer any questions he deemed an invasion of his privacy. About three percent of students appeared to have exercised this option on certain items and subtests.

The test battery was administered in five, 30-50 minute sessions.

Defining Reading Maturity: Conceptually and Operationally

A pleasing and cogent definition of reading maturity is not yet in the offing. Presented is a core statement, adapted from Gans (1963), and containing several seminal features, or attributes, as these currently are conceptualized. This is followed by a more "operational" definition which could be more easily translated into measures.

> Mature Reading is a manifestation of deep curiosity impelled by an inclination to read the lines, to read between the lines, and to read beyond the lines, and to do so with a willingness to be altered by, and wherever possible, to contribute to new states of knowledge.

The attributes of reading maturity described below can be categorized, albeit not exclusively, as fundamental, bracing, and/or complementary features.

A fundamental feature is an attribute invloved directly in reading competency -- e.g., word recognition and comprehension. A bracing feature is an element supportive of, and fundamental to, reading success -- e.g., sound logic and fund of general knowledge. Whereas, complementary features are those which help to define a person as literate and balanced, i.e., not merely as one who knows how to read, but as one who is educated and productive; e.g., ability to write, to be adaptive, to think elaboratively.

Each of these is viewed, in this conceptualization of reading maturity, to be within the province and purview of the reading specialist, and the schools. Each participates in overall "progress toward" reading maturity. The features and attributes of reading

maturity which follow can be thought of in simple graphic terms: they can be imagined as lines of development extending outward from a human center, point 0:

Development outward along each line can be plotted, to form an enclosed space having a measureable total area, as well as a describable shape:

This circular shape should be thought of not simply as a graph, but as something more like a cell: a living and growing thing, and one which grows in rather predictable ways. I imagine, for instance, that as it extends vertically, pressure is put upon the horizontal axis generating a tensing effect which Festinger (1963) called "cognitive dissonance". Energy and strength from the vertical acquisition feeds back toward the center and outward, urging growth along the horizontal lines. Particular "cell shapes" for progressive age groups, pre-school through adulthood, could likely be determined from a single criterion related assessment battery. For example, if various academic factors contributed to growth along the two vertical axes, and social-emotional factors to growth on the horizonatal axes, the "cell shape" might appear completely circular, though tiny in size for an infant. In due course as the child enters and profits from school, there would be rapid vertical growth with progressive horizontal development eventually, again, reaching the balance sought -- a full circle with all attributes in balance, though in a much greater size.

Important features of this dynamic process could be distilled for each individual, so that it could be determined, over time, which areas, or facets, of life the individual would tend to use to probe to the next possible level of growth. For some it might be

"social context" which provide the means by which to explore and make initial growth, for others it might be math and science, and for still others through reading and the language arts. The critical element to be determined is whether the individual has an effective 'probe' which then challenges the remainder of his being to grow out to it, or whether, in fact, his system of probing is defective, sadly inhibited, or merely annoyingly different from what we typically are prepared to accept within our current definitions and conventions in education.

A pragmatic means for "probing" and better understanding the student is offered through the current research effort. The means employed is a conventional one; a collection of tests, organized in a conceptual way, and graphed for visual display of a student's method, means, range, and level of growth, or progress toward reading maturity. Examples of such follow the continuation of exposition of the current research effort.

Attributes of Reading Maturity

The statements below represent a list of the attributes, or characteristics, which I have come to believe are the essential ingredients for progress toward reading maturity. These are offered for possible comparison with those of Gray and Rogers and for whatever additional clarity these offer to the overall paper.

Most of these attributes were translated into measurable factors.

1. Optimal basic reading skills -- word recognition, vocabulary, comprehension, speed and accuracy.

2. Optimal basic receptive language skills -- most essentially, familiarity with language redundancy patterns in prose, and more particularly, ability to deal with complex syntactic structures.

3. Sound fund of general knowledge.

4. Fundamental thinking skills -- sound logic, willingness to question assumptions, ability to recognize and solve problems.

5. Intellectual bent -- inclination to think elaboratively.

6. Emotional stability -- essentially the ability to remain emotionally buoyant

in dealing with the throes of living and learning.

7. Adequate cultural foundation -- one permitting a fair degree of compatibility, and therefore, recognition, understanding, and empathy with the mainstream of life and styles of being; this need not include endorsement of such.

8. Range and Adaptability -- ability to operate and to learn effectively in most all life situations; specifically in varying school type settings.

9. Profound comprehension of the fundamental "precepts" governing social conventions and practices; again, this need not necessarilty include endorsement of such. ("Comprehension" here is meant in much the way it is used by Weschler, 19 , on the Comprehension Subtest of the WISC).

10. Balanced judgment on ranging matters. This requires an advanced level of moral development, such as has been described by Kolberg (19) and others, and a practiced level of "evaluative" thinking, a form of thinking which calls together facts, intuition, logic, and values (Bloom & Krathwohl, 19).

11. Compelling curiosity, an inclination to manifest it, and the fundamental inquiry skills to actually do so.

12. Commitment to the discovery and creation of new ways and means of conceptualizing and/or doing anything and everything; at least to the extent of trying not to stand in the way of others' attempting such.

13. Raised and rising level of consciousness; awareness of self and others as part of a continuing process of altering states of being.

Toward these objectives, it has seemed to us that the mature reader, or more properly one making progress toward such, would be characterized as moving toward intellectual, language and emotional integrity; that is, he/she should have a healthy level of curiosity, and more, the accompaning risk threshold and ego strength to manifest it, repeatedly and continuously; and more, to do so, not merely in the critical reading of a book, but in the real life situations about which books are written.

Operational Definition

Reading maturity is evidence of solid reading competency, an adequate fund of general

information, overall language proficiency, logical thinking, sound critical judgment, and an ever growing state of social-emotional stability. It must be shown, too, that at least one of these is fueling the others to greater depth and durability.

Thus the assessment of Reading Maturity, by this definition, ideally should include measurement of reading, information, language, thinking and social-emotional development, with the indication of the approximate levels to which one should have developed given his age, gender, constitution (temperament, chemistry), cultural-academic-social heritage, and intellectual capacities. Thus, growth toward maturity can be understood in the context of each person's milieu, but, obviously, too, growth must be judged, at some point, against certain fundamental conceptually and norm-based criteria. This is necessary to take to account those for whom rate of growth is too slow to warrant use of the phrase "progress toward maturity", although, as suggested above, a truly embracing theory may be of considerable assistance in better understanding and treating even these problems.

Assessment Battery

Test 1: (Basic) Word Recognition: a word opposites test made up of words with regular and irregular elements.

Sample items:					
A. black:	1.red	2.whole	3.blue	4.green	5.white
B. sweat:	1.dry	2.bitter	3.neat	4.nit	5.score

Test 2: (Basic) Vocabulary: a word similarities test of high frequency words which should be known by the junior high school level.

Sample Items:					
A. congress:	1.President	2.parliament	3.board	4.color	5.Washington
B. nimble:	1.dumb	2.numb	3.agile	4.gifted	5.negative

Test 3: (Basic) Word Reasoning: selecting a word or phrase to complete an analogy. Words were elementary, the emphasis was on very basic reasoning.

Sample Items:
A. Shelves are to books, as cartons are to _____.
1.floors 2.ceilings 3.eggs 4.pickles 5.boxes
B. Eight is to ten, as thirteen is to _____.
1.eighteeen 2.twelve 3.fifteen 4.zero 5.five

Test 4: Syntactic Complexity: brief, syntactically complex sentences were analyzed for their relatively simple meanings.

Sample Items:

About the palace the curious citizens watch, through the iron-grilled fence, the merchants with gold-covered purses walking in the courtyard with an air of their importance.

A. "about the palace" means:
   1. around the palace
   2. the merchants are talking about the palace
   3. there will be a bout, or fight, at the palace
   4. where the merchants are going

B. "Ernest has been her favorite" is the same as:
   1. Her favorite had been Ernest
   2. Ernest had been favorite
   3. Her Ernest had been favorite
   4. Favored had been her Ernest

Test 5: Knowledge of Language Redundancy Patterns: a variation on the Cloze test, students selected the word which best completed sentences in a 250 word passage. Deletions were not made on a fixed schedule.

Sample Items:

There (56) $\begin{matrix}1)\text{were}\\2)\text{are}\end{matrix}$ many tests in which the Indian boy had to (57) $\begin{matrix}1)\text{know}\\2)\text{show}\end{matrix}$ that he could bear pain.

Test 6: Reading Comprehension: students read two relatively brief, high interest passages, which were followed by an array of multiple choice questions of a main idea, detail, and inferential nature.

Test 7: Speed and Accuracy in Content Area Material (also a measure of general fund of knowledge): working under a time constraint, students had to rapidly process the best answer to questions designed to questions designed to tap a diverse pool of commonly held information.

Test 8: Abstract vs. Concrete Verbal Reasoning: students had to decide which of four statements best represented the general idea of a proverb. Reading level and idea load were controlled; emphasis was placed on the students' inclination to think along abstract versus concrete lines: two points were awarded for the most abstract answer, and one point for a correct, concrete answer. The concept base for this test was Gorhams (19) Proverbs test.

Tests 9-12 were given in one sitting, and called "About You and Your Tastes".

Test 9: Elaborative Thinking: a brief selection was presented; it was followed by five critiques of varying degrees of sophistication. The student was aksed to order these from least to most preferred; points were awarded by the positions selected for the more sophisticated critiques.

Test 10: Emotional Maturity: emotional maturity was determined from responses on a 5-point scale, based upon an adaptation of the Bestiary Inventory (Manzo, 1975). Level of social-emotinal maturity was expressed as a number based upon the student's strength of empathy with some animals as opposed to others. The index was derived by taking the scaled responses of each student to 10 animals previously found to have the most positive attributes, summing these, multiplying the sum by two, and then subtracting the simple addition of student identifications with the 10 animals found to have had the most negative associations.

Justification for this procedure is documentable from studies showing differential levels of empathy for certain animals to be related to academic, social, and emotional states (Manzo, 1975; Manso, Lorton, and Condon, 197 ; Manzo, 197 ; and in Robinson, 1977; and Martin, 1978).

Test 11: Teaching/Learning Repertoire: ten methods of teaching/learning were described; students expressed their general level of preference for each on a five-point scale.

High total scores were deemed indicative of relatively uniform acceptance of most all methods, with some few methods held in very high preference.

The simple premise for this adaptation of the Learning Preferences Inventory (Manzo, 1975) was the belief that the broader a student's range, the greater his maturity and adaptability; conversely, the narrower a student's range, the greater the number of inhibitions he likely would have to overcome to be an effective, adaptable learner, and thinker.

We have conducted studies which have revealed much regarding the personality traits, academic skills, and attitudes of persons with selected preferences, as well as overall level of acceptance to all 10 teaching/learning methods (Manzo, 1975; Manzo, Lorton, Condon, 197 ; Manzo, 197 ; Robinson, 1977; and Martin, 1978). Together, these studies lend credence to the elementary conclusion that the higher the index, or measure of positive regard for the several ways teaching/learning occurs, the greater the student's repertoire, and therefore, his/her potential to be adaptive.

Test 12: Cultural Compatibility (an advanced form of "readiness"), called "My Beliefs/Experiences/Life Style." On a five-point scale students expressed their introspective responses to a range of items selected to represent many of the most fundamental experiences, opportunities, attitudes and values which collectively tend to be assumed to be the composition of the average American student, and therefore, around whom curriculum and instructional methods are selected and designed.

Theoretically, the ideal student would respond to each item with a 5, indicating the he had had, or was having such experiences, and shared such views and attitudes as were expressed. Thus, the higher the score, the higher the degree of "cultural" compatibility, and conversely, the lower the score, the less likely that the student would be equal to the assumptions and expectations of school.

The genesis for this scale was suggested by the work of Weiner and Cromer (19) in their "difference model". Their complex thesis, made simple, is that a student often will do poorly in school simply because (s)he is different in some small or substantial way(s) from the nature and character of the school and the things (s)he is asked to do in school.

This particular sub-test is based on an earlier version by Manzo (19) and a second revision, studied by Meeks, Eanet and Manzo (19) and found to be a credible measure of several categories of differences. The findings, in sum, said that the less different a student is from the expectations of school, the fewer the inhibitions he will encounter, and the greater the probability that he will be able to grow, and mature, in the school environment.

Tests 13-15 are intended to measure both comprehension, in the cosmic sense of surrounding facts and experiences, and evaluative thinking, in a variety of situations.

The formula for constructing and scoring each of these tests was the same. Fifteen mature readers, holding either masters' degrees or doctorates, were asked to make scaled judgments on a variety of items. Their responses, with some modifications growing out of subsequent discussion among them, and guided by the experimentors, became the criteria for "best" responses. There was amazing uniformity of response to over 80% of the items.

Students received three points for "best" response, and two points for a choice which was plus or minus one digit from it (on a 5-point scale).

Test 13: Critical Judgments: Useful Information: students were asked to judge the value to society of information contained in each of several sentences. They were to assume that the information was correct; which, to the best of our knowledge, it was.

Examples of Statements
1. Adolf Hitler once owned 8,960 acres of land in Colorado.
2. Two things cannot occupy the same place at the same time.

Test 14: Critical Judgments: Reasonability: students were asked to judge how "reasonable" they believed each of several sentences to be.

Examples of Statements
1. It is "ok" for parents to hit young children when it appears necessary.
2. Men appear to be more naturally aggressive than women.

Test 15: Critical Judgments: Comprehensive: students were asked to make a range of judgments on several matters covered in two previously employed selections from the reading comprehension subtest.

Judgments included some of the type of evaluative thinking required in tests 13 and 14, plus estimations of "Balance" --Does this word or phrase seem balanced: not too flat, nor emotional, nor biased?; and "Logic" -- Does this seem logical within the framework of the story?

A four-page illustration and warm-up preceded this section.

Findings and Conclusions

Each of the 15 tests employed seemed to measure adequately what it was designed to measure, with significant differentiation where it was expected, and with relatively low levels of standard error from the mean.

Table I
Measures of Central Tendency
and Error on Tests 1-15
N=579

Variable	Max.Value	Mean	Std.Deviation	Std.Error
1. Word Recog.	10	8.8	1.1	.05
2. Vocabulary	10	6.2	1.4	.06
3. Basic Reasoning	10	6.9	1.9	.08
4. Syntax	6	4.3	1.4	.06
5. Language Patterning (Cloze)	25	10.5	3.4	.14
6. R. Comprehension	15	8.3	3.3	.13
7. Spd/Accuracy/Knowl	45	27.6	8.9	.37
8. Abst. Verbal Reasong	30	18.3	7.6	.31
9. Elaborative Thkg	45	26.1	7.2	.30
10. Emot. Maturity	70	36.8	12.5	.52
11. Tchg/Lrng Range	62	39.2	7.4	.30
12. Cult'l Compatibility	286	123.8	47.7	1.98
13. CJ: Useful Infor	40	19.7	8.1	.34
14. CJ: Reasonability	23	9.8	4.8	.19
15. CJ: Comprehensive	41	20.7	9.8	.40
TOTAL (ALARM SCORE)	526	377.0	74.3	3.00

There were several significant differences in mean scores on subtests across sex, and race, though a few across age levels (which spanned 12 to 14 years). Estimation of differences among means was determined by analysis of variance.

Differences were calculated on an eighty subject subset of the total population drawn from one school. The students of this urban school represented a somewhat more comparable socio-economic level across racial lines than would have been found in data comparing dissimilar geographic settings.

Data from the subtests were grouped into logical subtest units:

GRL: General Reading/Language(Syntactic)Proficiency: Syntax(Test 4), Language Redundancy Patterns(modified Cloze)(Test 5), and Reading Comprehension(Test 6)

GK: General Knowledge: Word Recognition(Test 1), Vocabulary(Test 2), and Speed/Accuracy/Fund of Knowledge(Test 7)

THKG: Thinking: Analogies, or word reasoning(Test 3), Abstract Veral Reasoning(Test 3), and Elaborative Thinking, or propensity toward such(Test 9)

SEM: Social-Emotional Maturity: Emotional Maturity(Test 10), Teaching/Learning Repertoire(Test 11), and Level of Cultural (experiential) Compatibility(Test 12)

CJ: Critical Judgments: Three Measures of Evaluative Thinking -- of Useful Information(Test 13), of the Reasonability of certain views(Test 14), and of comprehensive factors connected in continuous passages(Test 15)

ALARM
Total assessment score of progress toward reading maturity

Table 2
General Reading and Language

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	582.261	6	97.043	2.358	0.039
Sex	176.824	1	176.824	4.297	0.042
Race	301.991	3	100.664	2.446	0.071
Age	152.152	2	76.076	1.849	0.165
Total	3586.379	79	45.397		

Table 3
General Knowledge

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	1501.933	6	250.322	3.129	0.009
Sex	351.807	1	351.807	4.398	0.039
Race	764.027	3	254.676	3.183	0.029
Age	597.616	2	298.808	3.735	0.029
Total	7341.914	79	92.936		

Table 4
Thinking

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	1324.080	6	220.680	2.133	0.060
Sex	105.378	1	105.378	1.018	0.316
Race	471.658	3	157.219	1.519	0.217
Age	639.307	2	319.653	3.089	0.052
Total	8877.883	79	112.378		

Table 5
Social-Emotional Maturity

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	12969.789	6	2161.631	1.018	0.421
Sex	12.434	1	12.434	0.006	0.939
Race	8593.016	3	2864.338	1.348	0.265
Age	2707.877	2	1353.939	0.637	0.532
Total	168040.250	79	2127.092		

Table 6
Critical Judgments

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	4159.930	6	693.322	2.282	0.045
Sex	1567.312	1	1567.312	5.158	0.026
Race	1852.093	3	617.364	2.032	0.117
Age	1080.967	2	540.483	1.779	0.176
Total	26342.633	79	333.451		

Table 7
Total ALARM Score

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	57468.883	6	9578.145	2.531	0.028
Sex	11630.836	1	11630.836	3.074	0.084
Race	34179.973	3	11393.324	3.011	0.036
Age	10091.340	2	5045.668	1.333	0.270
Total	333715.250	79	4224.242		

Correlational Analyses

Routine correlational analysis of the subtests revealed that most all subtests were statistically significantly related to each other, though at relatively low levels, suggesting some shared variance, but, too, considerable independence among most factors.

Table 8
Correlation Coefficients of Subtests
to Total (ALARM) Score
(N=529)

Variable	Correlation	Significance Level
1. Word Recog.	.26	(all greater than .001)
2. Vocabulary	.27	
3. Analogies or word Reas	.40	
4. Syntax	.38	
5. Lang. Patterning	.44	
6. R. Comprehension	.48	
7. Spd/Accuracy Knowl	.33	
8. Abst. Verbal Reasong	.50	
9. Elaborative Thkg	.31	
10. Emot. Maturity	.48	
11. Tchg/Lrng Range	.48	
12. Cult'l Compatibility	.82	
13. CJ: Useful Inform.	.58	
14. CJ: Reasonability	.38	
15. CJ: Comprehensive	.53	

In the interest of comparison, subtest scores from the Iowa test of Basic Skills were correlated with one another, and with the ALARM battery.

Table 9
Intercorrelations Iowa Scores
(N=80)

	Vocab	Rdg.	Total Lng.	Wk.Stdy.	Math 1	Math 2	Total Math	Composite
Vocab	1.0000	.6431	.8004	.7291	.6940	.6333	.7146	.6705
Rdg	.6431	1.0000	.7190	.7523	.6743	.5374	.6663	.7405
Total Lang.	.8004	.7190	1.0000	.7102	.7381	.6538	.7515	.7414
Wk. Stdy.	.7291	.7523	.7102	1.0000	.7178	.6552	.7427	.7346
Math 1	.6940	.6743	.7381	.7178	1.0000	.7397	.9578	.7351
Math 2	.6333	.5374	.6538	.6552	.7397	1.0000	.9013	.6298
Total Math	.7146	.6663	.7515	.7427	.9578	.9013	1.0000	.7420
Composite	.6705	.7405	.7414	.7346	.7351	.6298	.7420	1.0000

All Iowa subtest scores correlate significantly with one another and with the composite score at the .0001 level. The strength of the correlations is so great as to suggest near unity among the subtests in the battery.

Table 10
Intercorrelations
ALARM and Iowa
(N-80)

Tests	Vocab.	Rdg.	Total Lng.	Wk.Stdy.	Math 1	Math 2	Total Math	Composite
Sub-total: GRL	.4470	.6150	.5848	.4158	.5532	.4980	.5683	.4309
(4,5) LGS	.2646	.4515	.4778	.2351	.4114	.4248	.4462	.3221
(6) RC	.5114	.6268	.5535	.4854	.5593	.4556	.5539	.4342
Sub-total: GK	.4667	.3518	.5427	.2543	.4711	.4934	.5086	.4475
(1,2) WK	.3494	.4387	.4565	.2493	.4224	.3643	.4255	.3895
(7) SAC	.3721	.1316	.3824	.1527	.3164	.3978	.3676	.3105
Sub-total: THKG	.3409	.5247	.3950	.3012	.5212	.4577	.5317	.3739
(3) WR	.3076	.4872	.4245	.2882	.4637	.4112	.4744	.4419
(8) AVR	.3729	.5095	.5075	.3400	.4464	.4202	.4650	.2778
(9) ELB	.0403	.0047	.2112	.0665	.0865	.0394	.0758	.0160
Sub-total: SEM	.0911	.1149	.2317	.0625	.2461	.1353	.2195	.1522
(10) EM	.1565	.1323	.2792	.0417	.1914	.1566	.1897	.1978
(11) TLR	.0537	.0865	.0543	.1011	.0398	.0334	.0377	.0714
(12) CC	.0188	.0989	.1068	.1190	.2024	.0697	.1637	.0802
Sub-total: CJ	.2804	.2911	.3740	.1587	.3338	.4342	.3973	.2105
(13) CJ1	.3277	.4533	.5053	.2772	.4032	.4423	.4468	.3036
(14) CJ2	.0577	.0164	.0945	.0479	.0647	.2266	.1342	.0079
(15) CJ3	.2831	.2555	.2881	.1486	.3276	.3635	.3649	.1894
TOTAL	.3184	.3678	.4532	.2599	.5012	.3810	.4862	.3252

Sig. Levels .183>.05
.256>.01

Reading Maturity: Composition of

The overall composition of Reading Maturity (ALARM) as it came to be defined by our deliberations and the test factors selected and devised is most evident in the tables of intercorrelations generated on the 15 subtests and the logical groupings of those described above. (A preliminary factor analytic study, unreported here, appears to support these categories.)

Table 11
Correlations
All Subtests
(N=80)

	WR	VOC	ANALOGIES	SYNTAX	CLOZE	GRC	SAC	ABS/CONC	CLB	EM	TLR	CC	CJ1	CJ2	CJ3	TOTAL
WR	1.0000	.2830**	.4517	.3995	.4412	.3701	.2239	.3539	-.1309	.3172	.1197	-.1428	.3439	.1517	.1694	.3601
VOC.	.2830**	1.0000	.5118	.5108	.4526	.4523	.0981	.4685	-.1931	.3508	-.0288	-.0297	.4434	.1657	.2600	.3062
ANALOGIES	.4517**	.5118**	1.0000	.5247	.4613	.4364	.1683	.4838	-.0189	.2796	-.0420	.1247	.5764	.1154	.3488	.4404
SYNTAX	.3995**	.5108**	.5247**	1.0000	.6494	.5850	.1476	.6574	-.2139	.2814	.1283	.1355	.5111	.3268	.4677	.5145
CLOZE	.4412**	.4526**	.4613**	.6494**	1.0000	.5025	.2715	.6160	-.0351	.2956	.0257	.0847	.5023	.3073	.4504	.5000
GRC	.3701**	.4523**	.4364**	.5850**	.5025**	1.0000	.0953	.6881	-.0325	.2124	.1148	-.2230	.5932	.1399	.4458	.5760
SAC	.2239*	.0981	.1683	.1476	.2715**	.0953	1.0000	.1866	-.0007	.2085	.0944	-.1775	.0811	.3113	.3038	.2107
ABS/CONC	.3539**	.4685**	.4838**	.6574**	.6160**	.6881**	.1866*	1.0000	-.0687	.2626	.0837	-.0892	.6110	.2749	.5313	.5586
CLB	-.1309	-.1931*	-.0189	-.2139*	-.0351	-.0325	.0007	-.0687	1.0000	-.0951	.0651	-.0830	-.0940	.0040	.1125	-.0045
EM	.3172**	.3508**	.2796**	.2814**	.2956**	.2124*	.2085*	.2626**	-.0951	1.0000	.0261	-.1647	.1693	.2752	.1881	.2223
TLR	.1197	-.0288	-.0420	.1283	.0257	.1148	.0944	.0837	-.0651	.0261	1.0000	.0347	.1004	-.1241	.1435	.1446
CC	.1428	-.0297	.1247	.1355	.0847	.2230*	.1775	.0892	-.0830	.1647	.0347	1.0000	.2267	-.1075	.2037	.7303
CJ1	.3439**	.4434**	.5764**	.5111**	.5023**	.5932**	.0811	.6110**	-.0940	.1693	.1004	-.2267*	1.0000	.2266	.5610	.6104
CJ2	.1517	.1657	.1154	.3268**	.3073**	.1399	.3113**	.2749**	.0040	.2752**	.1241	-.1075	.2266*	1.0000	.5436	.2479
CJ3	.1694	.2600**	.3488**	.4677**	.4504**	.4458**	.3038**	.5313**	.1125	.1881*	.1435	.2037*	.5610**	.5436**	1.0000	.6477
TOTAL	.3601**	.3062**	.4404**	.5145**	.5000**	.5760**	.2107*	.5586**	-.0045	.2223*	.1446	.7303**	.6104**	.2479*	.6477**	1.0000

one-tailed test of statistical significance

*.05 level (.183)
**.01 level (.256)

Table 12
Correlations: Logical Groupings
(N=80)

	GRL	GK	THKG	SEM	CJ	ALARM
GRL	1.0000	.5074	.5355	.3695	.6028	.6335
GK	.5074**	1.0000	.4749	.2540	.4446	.3921
THKG	.5355**	.4749**	1.0000	.2499	.4381	.4404
SEM	.3695**	.2540*	.2499*	1.0000	.3380	.7123
CJ	.6028**	.4446**	.4381**	.3380**	1.0000	.6314
ALARM	.6335**	.3921**	.4404**	.7123**	.6314**	1.0000

Sig. Levels:(183= .05; 256=.01)

A simple translation of these tables suggest the following regarding the factors which have entered into each logical unit of the Total ALARM,or 'progress toward reading maturity', score.

1. General Reading and Language: (GLR) is involved in a fundamental and significant way with all other factors tested. It is most highly related to 'critical judgments', next to 'thinking', then to 'general knowledge', and still at a quite substantial level, to 'social-emotional maturity'.

2. General Knowledge: (GK) is most highly related to general 'reading/language', then to 'thinking', then 'critical judgment', then 'social-emotional maturity'.

3. Thinking: (THKG) is most highly related to 'general reading/language', 'general knowledge','critical judgments', and, then, to 'social-emotional maturity'.

4. Social-Emotional Maturity: (SEM) has the lowest strength of relationship to other factors. These are signifficantly high relationships, nonetheless. In the order strength of relationship these are: to 'general reading/language', 'critical judgments', and about equally to 'general knowledge', and 'thinking'.

5. Critical Judgments: (CJ) is quite highly related to 'general reading/language', about equally, highly related to 'general knowledge' and 'thinking', and somewhat less, though still significantly related, to 'social-emotional maturity'.

6. The overall ALARM or Progress Toward Reading Maturity Score, is very highly related to 'social-emotional maturity', 'general reading/language', and 'critical judgments', and somewhat less highly related to 'general knowledge' and 'thinking' as measured by these tests.

Limitations/Implications/Conclusions

The early cording-off of an open area, such as that constituting reading maturity is bound to appear to be relatively arbitrary, and, defining of itself. It is a necessary process, however, which can hardly be done otherwise. Thus, the results of this study and the conclusions which are drawn may appear circular, but they are, too, logical and ordered toward the end of defining a new standard...one which will need to be supported or repudiated more so on rational, than on empirical grounds.

Asked, in effect, was the question: What is Reading Maturity, can it be measured adequately, and what would be the implications of such to school and society?

In most ways, the effort appears to have been worthwhile: an undefined collection of thoughts on Reading Maturity have been shaped into a core statement and related attributes. Advancing both definition and theory, too, has been the establishment of a means by which to measure, and therefore, approximate several attributes held to be seminal features of 'reading maturity'. And, finally, it can now be stated more clearly what more needs to be known, or undertaken, to extend this research enterprise.

The most difficult task "yet to be done", it seems, is the need to define better, and then to assess the critical variable implicit in almost any notion of Reading Maturity, namely, 'optimal reading' performance. Optimal skill suggests not too much, nor too little. Thus, for example, energy expended beyond a certain point, to be more and more proficient in reading such as in different genre, or the mastering of greater subtleties in phonics, or reading more rapidly, consititues in some way, misspent and misdirected energy. Conceptually, that point is simple enough to state: it is the point at which reading skills continue to be honed not as an extension of more profound thinking, but rather, as an extension of some emotional state such as intellectualism or dilenttantism.

The study of this issue, or problem, likely will prove pertinent, as suggested earlier, to the deeper comprehension of the problem(s) of remedial level readers; one problem appears to be the reciprocal of the other, in that both appear to be the result

of -- among other things -- arrested emotional development. In one case the student closes out the information in books, and in the other, engages life only as it is found in books.

On this account, and others, the search for a clearer definition and more definitive theory of "Reading Maturity" appears to be a potentially fruitful line of inquiry. On a related note, it seems critical that lines of research and programming be expanded beyond the concept of "reading maturity" to an even more inclusive concept which might be called the "literate" person. Some of the features which immediately come to mind as imperatives in such a line of inquiry are factors such as writing, speaking skills, and aesthetic sense. Thoughtful address to these factors, and related others, could shift the emphasis of schools beyond schooling, (i.e., training), and toward educating, a more enlightened commitment to individuals with strong implications to the advancement of civilization.

Historically, it appears that early efforts to teach reading and values could be called a first generation approach. Later efforts to teach skills, i.e., learning-to-learn, could be called a second generation approach. The current effort, to advance thinking beyond the page -- i.e., promoting reading maturity, is best understood as a third generation approach. And the re-implanting of serious concern for aesthetics seems to represent the most likely development of the next generation. It is not likely that any one of these thrusts has ever been nor ever will be in exclusive operation.